

Environmental Sustainability



Presentation by

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BACKGROUND

📖 INTEREST IN ENVIRONMENTAL
SUSTAINABILITY

📖 SUSTAINABLE BASE OF THE FUTURE

📖 EMS/ GREENING OF THE GOVERNMENT

📖 NATURAL CAPITALISM/ NATURAL STEP

Camp Lejeune Profile

- 📖 150,000 + acres
- 📖 14 miles of oceanfront
- 📖 Almost wholly contains the New River
- 📖 Thousands of acres of wetlands
- 📖 100,000 + population
- 📖 6,000 + buildings
- 📖 436 miles of roads
- 📖 Sewage treatment plant
- 📖 Water treatment plants
- 📖 Steam plant
- 📖 Solid waste landfill

Opportunities

Steam Generation

550 MBTU/hr steam plant burning coal and oil and spewing CO_2 NO_x SO_x into the atmosphere.

Wastewater Treatment

15 MGD advanced wastewater treatment plant with biological nutrient removal sand filtration, UV disinfection treating approximately 8 MGD to drinking water quality and dumping it into the New River.

Potable Water Treatment

8 MGD of water withdrawn from the Castle-Hayne Aquifer, treated at high cost to Safe Drinking Water Act standards then used largely to pour over sewage, wash vehicles, water lawns.

Solid Waste Landfill

RCRA subtitle D landfill with double liner leachate collection and groundwater monitoring being used as a repository for carpet, mattresses, wood debris, construction demolition debris, appliances and a variety of items most of which could or should have been recycled if only they had been manufactured for that purpose.

Energy Waste

Enormous electrical energy and heat energy waste from poorly designed, wrongly oriented and inadequately insulated buildings and more being brought on line each year with many of the same deficiencies.

Procurement

Procurement practices resulting in purchase rather than leasing of products like carpet and mattresses which lead to landfill disposal as opposed to recycling.

Landfill Gas

Usable quantities of methane gas manufactured by nature at landfills being allowed to dissipate.

Appliance Purchases

Purchase of thousands of appliances for family housing units with little emphasis on higher efficiency requirements in specifications or of long-term leasing versus purchase.

Purchase Power

Purchase power over millions of dollars annually in goods and services with no effort to influence these procurements toward sustainability.

Alternative Fuel Vehicles

Absence of alternative fuel vehicle purchases attributed to location in a Clean Air Act attainment area.

Approach

Change must be made by evolution
not revolution.

📖 Architects

📖 Design Engineers

📖 Transportation Managers

📖 Utilities Engineers

📖 Procurement Agents

Do not respond well to sweeping
changes, especially those thought up
by environmentalists.

Environmental Sustainability Guidance Manual

So we decided to develop an idea book of common sense money saving initiatives that could be implemented over the next 30 – 50 or even 100 years.

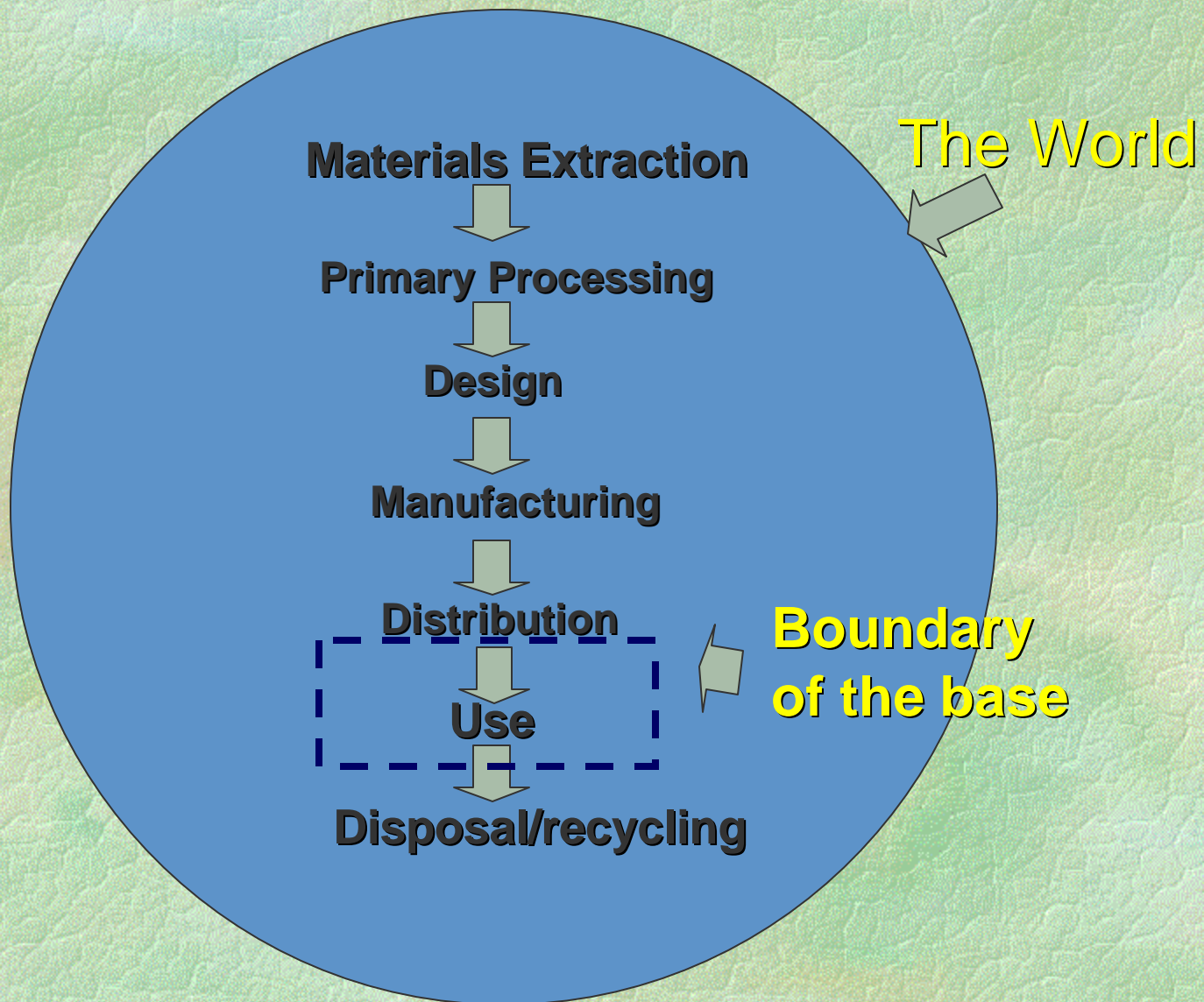
Outline of Our Approach

- 📖 Establish definition and framework for sustainability
- 📖 Define the base's sustainability baseline
- 📖 Define a vision for the base of the future
- 📖 Research alternative measures to increase sustainability step-by-step
- 📖 Develop a base sustainability order
- 📖 Prepare a Sustainability Guidance Manual

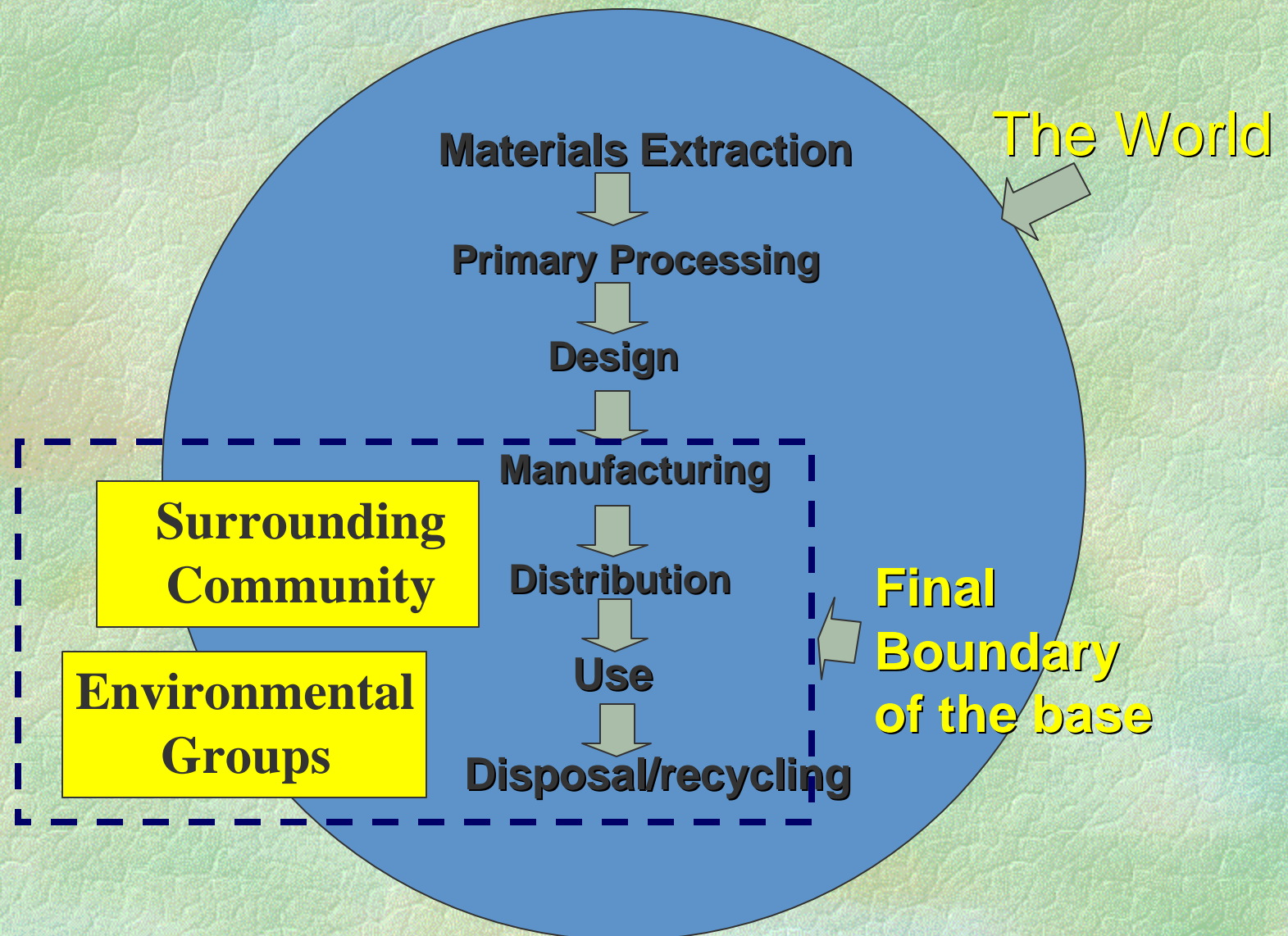
Sustainability Definition and Framework

- 📖 See definition above.
- 📖 Framework: used a combination of *The Natural Step* and *Natural Capitalism* to establish basic principles and guide the direction of our actions
- 📖 Defined the base sustainability boundary for study purposes
 - + On and off-limits subjects
 - + Physical boundary of the base's influence

Base Physical Boundary



Physical/Social Boundary Selected for Project



Defining the Base Sustainability Baseline

- 📖 Definition of categories to be studied:
building systems, energy, transportation,
solid/hazardous waste, etc.
- 📖 Inventory of current activities in all
categories, with measurements
- 📖 Interviews on opportunities for
improvements and pending projects

Defining the Vision

- 📖 1 1/2 day, 40-80 person workshop of base civilian and military personnel, and a few outside experts
- 📖 Defined vision, goals, opportunities, obstacles to implementation

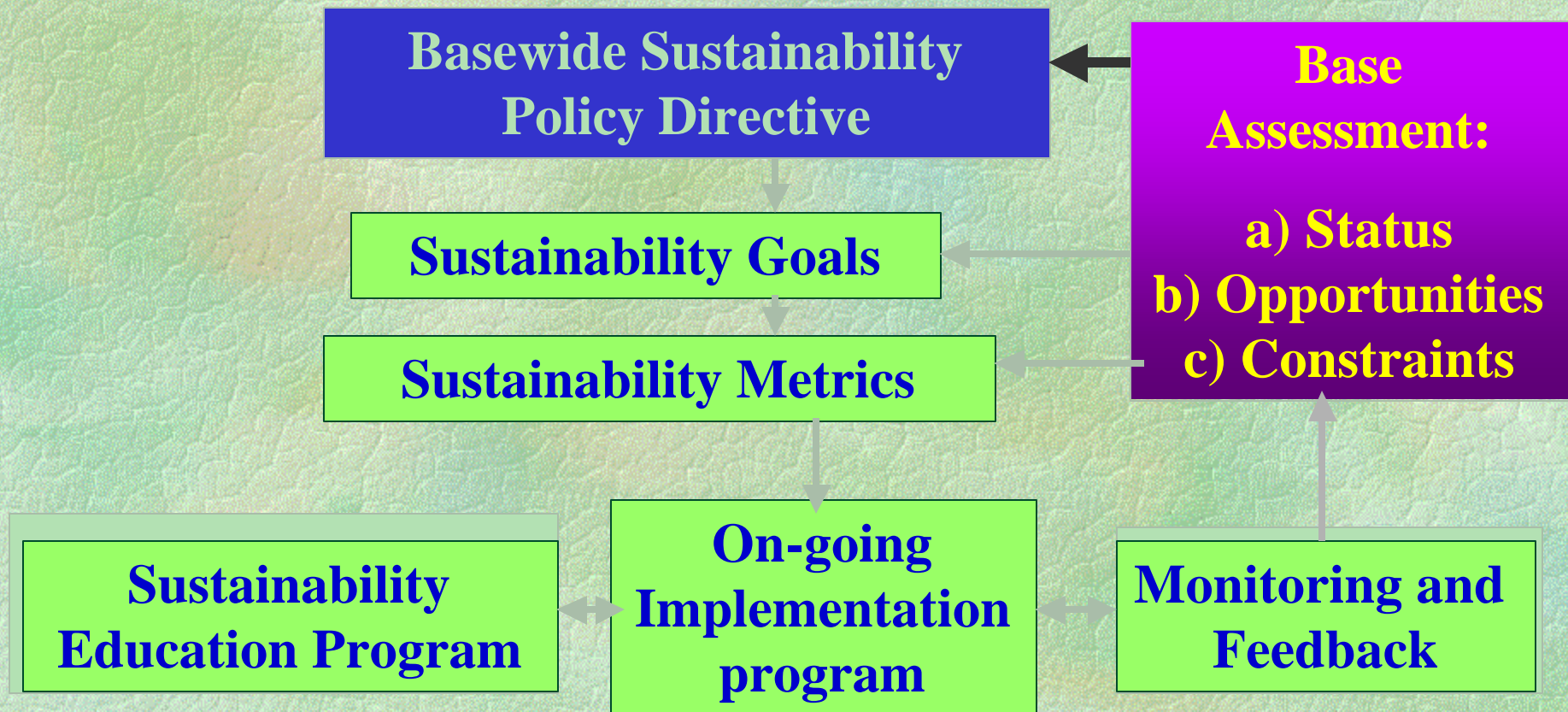
Research into Opportunities

- 📖 Research into the best-of-the-best in sustainability for each component part of the base.
- 📖 Seeing military, civilian, industrial benchmarks
- 📖 Describing step-by-step increments for change for the 25-year planning horizon

Base Order Development

- 📖 Necessary ingredient to tie together diverse activities and provide long-term guidance and assistance
- 📖 Sets overall policy for moving toward sustainability
- 📖 Proposes Sustainability Working Group of base command AC/S divisions and tenant commands, led by AC/S EMD
- 📖 Proposes establishing performance metrics and training programs









Eventual Base Order Outcome: a Lejeune Sustainability Plan



Environmental Sustainability Guidance Manual preparation

- 📖 Vision
- 📖 Framework for Change
- 📖 Basewide Strategy
- 📖 Opportunities Assessment and Guidance
- 📖 Appendixes with examples and guidance
(modeled on P2 manuals)

POTENTIAL BENEFITS

-  **100 % RECYCLING OF WASTEWATER**
-  **ELIMINATION OF WATER TREATMENT PLANTS**
-  **ELIMINATION OF EMISSIONS FROM CENTRAL HEAT PLANTS**
-  **ELIMINATION OF REGULATORY PERMITS**
-  **REDUCTION/ ELIMINATION OF SOLID WASTE**
-  **ELIMINATION OF AUTOMOBILE EMISSIONS**
-  **LOWER ENERGY COSTS THROUGH GREEN BLDG DESIGN**
-  **ELIMINATION OF HAZARDOUS CHEMICALS**

INFRASTRUCTURE

 **ENERGY**

 **WATER**

 **WASTEWATER**

 **BUILDINGS AND STRUCTURES**

 **MASTER PLANNING**